Initiation Package for Endangered Species Act Consultation

1) Walker Fire Rehabilitation Project, and
2) 2020 Plumas National Forest Road and Trail Maintenance Project

I. INTRODUCTION

The purpose of this biological assessment is to review two projects with overlapping action areas. These two projects will be concurrently implemented and have considerable spatial overlap; however, they have different activities, different needs, and are not connected actions (Figures 1-2). These projects are the "Walker Fire Rehabilitation Project" and the "2020 Plumas National Forest Road and Trail Maintenance Project". Hereinafter, when referring to both projects simultaneously, they are termed the "Walker Fire Projects". They both are described in enough detail to determine to what extent the proposed action may affect threatened, endangered, proposed threatened, or proposed endangered species and their habitats. The following information is provided to comply with statutory requirements to use the best scientific and commercial information available when assessing the risks posed to listed and/or proposed listed species and their designated or proposed critical habitat by proposed federal actions. This initiation package is prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)).

Threatened, Endangered, Proposed Threatened or Proposed Endangered Species
The following listed and proposed species may be affected by the proposed action:

Sierra Nevada Yellow-legged Frog *(Rana sierrae)* **E**
Gray Wolf *(Canis lupus)* **E**

Critical Habitat
The following designated critical habitat may be affected by the proposed actions:

Sierra Nevada Yellow-legged Frog *(Rana sierrae)* **Boulder – Lone Rock Creeks subunit**

The Walker Fire Rehabilitation Project does not overlap critical habitat. The 2020 Plumas National Forest Road and Trail Maintenance Project does overlap critical habitat; however, proposed actions will have no effect on designated critical habitat (documented in environmental effects analysis below).

Species not included in consultation package:
The "Walker Fire Rehabilitation Project" and the "2020 Plumas National Forest Road and Trail Maintenance Project" were entered into the IPAC website on Feb 29, 2020. Three species included on the species lists obtained from U.S. Fish and Wildlife Service (USFWS) and the National Oceanic Atmospheric Administration National Marine Fisheries Service were eliminated from analysis due to lack of species distribution, suitable habitat, and lack of designated critical habitat. These species are listed below:

Pacific Fisher (*Pekania pennanti*) proposed Threatened,
Delta smelt (*Hypomesus transpacificus*) Endangered,
Carson Wandering Skipper (*Pseudocopaeodes eunus obscurus*) Endangered.

II. CONSULTATION TO DATE

The Forest Service has not previously consulted with Fish and Wildlife Service on either project.

III. DESCRIPTION OF THE PROPOSED ACTION

Background

The Walker Fire began on Wednesday, September 4, 2019 and burned approximately 58,787 acres on the Mt. Hough and Beckwourth Ranger Districts. Fire severity assessment indicated approximate half (29,440 acres) of vegetation burned at high severity (75-100% tree mortality) with only 7% (3,837 acres) of vegetation burned at moderate severity (50-75% tree mortality). Approximately 1,421 acres within the fire perimeter are private lands or other non-Federal ownership. Proposed restoration activities are appropriate for all National Forest Service System land allocations with goals of restoring habitat, maintaining appropriate long-term fuel profiles, and recovering the economic value of some dead and dying trees.

Walker Fire Rehabilitation Project Location

The action area is defined as all areas proposed for treatment and all adjacent areas potentially impacted by proposed activities. The action area (Walker Fire perimeter) is located on the Mt. Hough and Beckwourth Ranger Districts of the Plumas National Forest (Figure 1). The action area for the Walker Fire Rehabilitation Project ranges in elevation from 4,000 feet at Red Clover Creek and Indian Creek Confluence to 7,015 feet at Babcock Peak. The treatment area is 4,218 acres, and the action area is 58,787 acres (Figure 1). The legal land description for the project is: Township (T) 25 North (N), Range(R) 11 East (E), Sections 1, 11-13; T25N R12E Sections 1-18, 20-24; T25N R13E Sections 3-10, 15-18; T26N R11E Section 36; T26N R12E Sections 1-5, 7-36; T26N R13E Sections 1-3, 5-35; T27N R12E Sections 23, 25-28, 32-36; and T27N R13E Sections 30-32, 34-36; Plumas County, California, Mount Diablo Base Meridian (MDBM).

2020 Plumas National Forest Road and Trail Maintenance Project Location

The 2020 Plumas National Forest Road and Trail Maintenance Project is located on the Mt. Hough and Beckwourth Ranger Districts of the Plumas National Forest (Figure 2). The project area overlaps with the Walker Fire perimeter and extend beyond the perimeter to account for road segments in need of maintenance. The action area for the 2020 Plumas National Forest Road and Trail Maintenance ranges in elevation from 4,000 feet at Red Clover Creek and Indian Creek Confluence to 7,015 feet at Babcock Peak. The treatment area is 7,886 acres, and the action area is 71,325 acres (Figure 2). The legal land description for the activities is: Township (T) 25 North (N) Range (R) 11 East (E) Sections 1, 11-13; T25N R12E Sections 1, 5-6, 8-18, 20-24; T25N R13E Sections 3, 5-10, 16-18; T26N R11E Section 36; T26N R12E Sections 1-5, 7-17, 20-29, 31-36; T26N R13E Sections 2-3, 5-11, 13-24, 26-33; T27N R12E Sections 13-15, 22-27, 29, 32-36; T27N R13E Sections 2-3, 10-11, 15, 19, 21-22, 28, 30-33; T28N R13E Sections 33-34; Plumas County, California, Mount Diablo Base Meridian (MDBM).

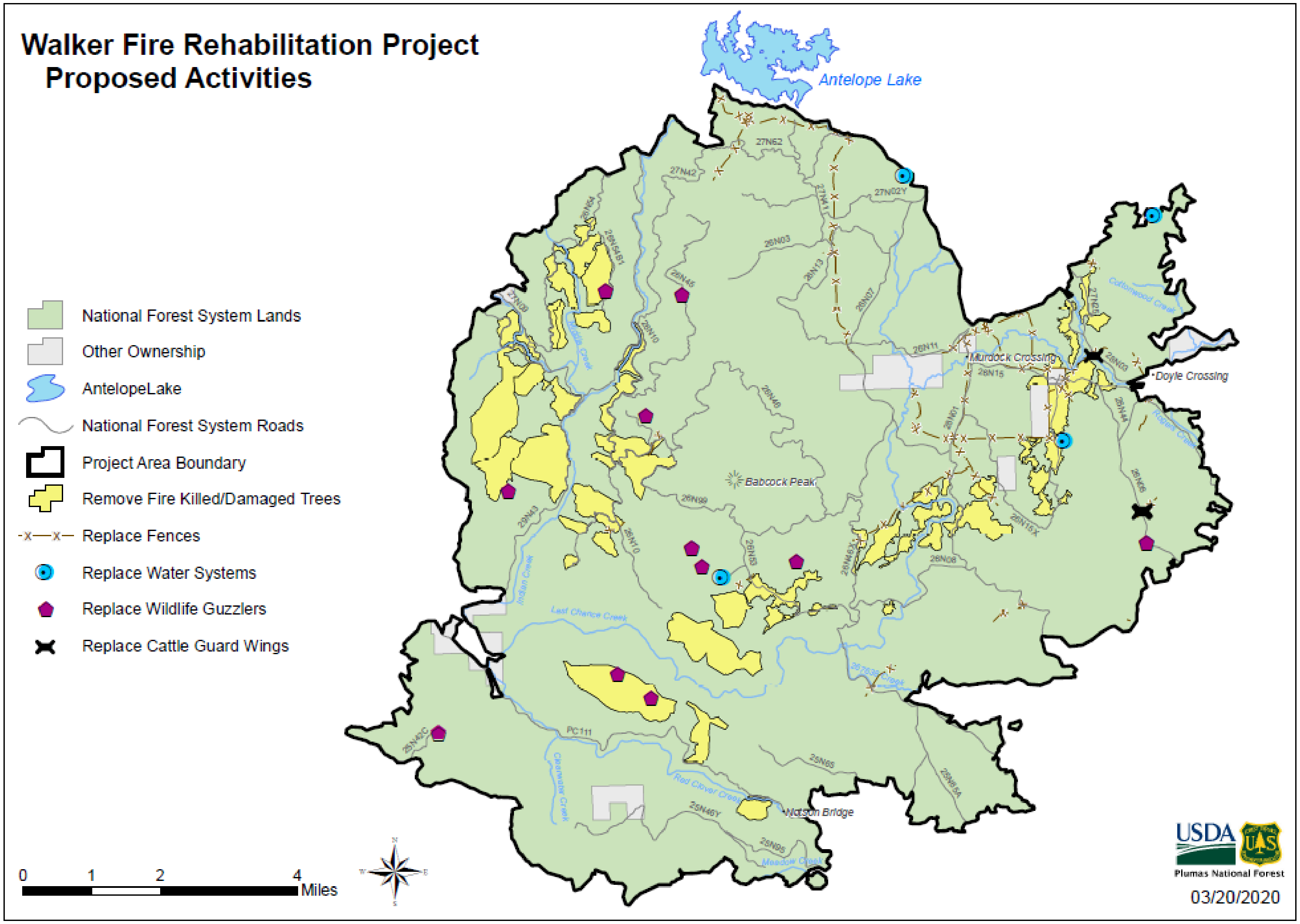

Figure 1. Walker Fire Rehabilitation Project action area (Project Area Boundary) and proposed treatments.

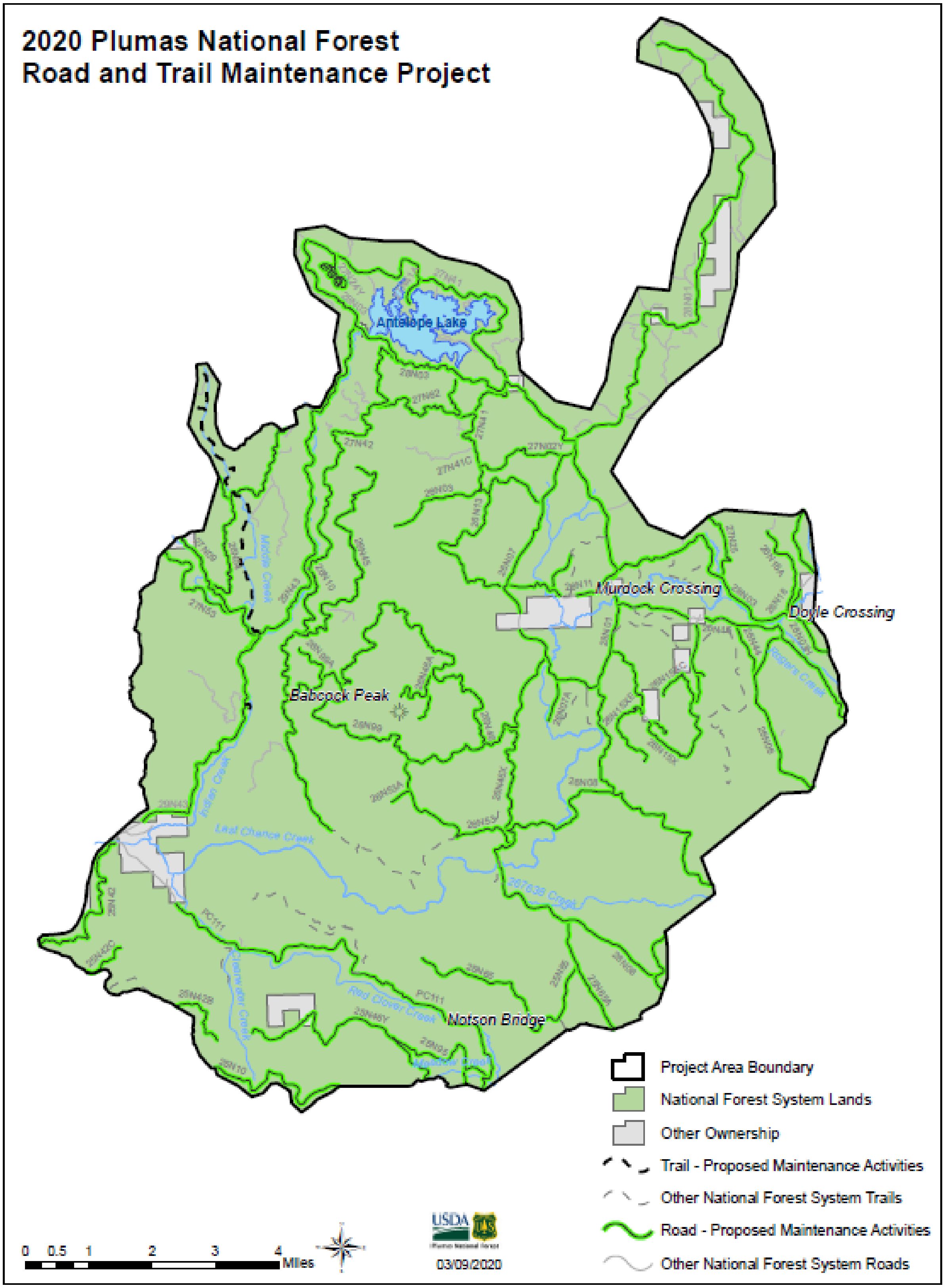

Figure 2. The 2020 Plumas National Forest Road and Trail Maintenance Project action area (Project Area Boundary) and proposed treatments.

Walker Fire Rehabilitation Project Activities

This project proposes 4,200 acres of post-fire rehabilitation activities to repair or improve lands unlikely to recover to a management approved condition from wildland fire damage (Table 1).

This project specifically includes removing fire-killed and fire-injured trees with a 70 percent probability of mortality on lands that are unlikely to recover to a management approved condition from wildland fire damage for the purposes of managing fuels and establishment of forested conditions. Treatments also include follow-up tree planting.

Approximately twenty-three miles of range fencing, four water systems, and three cattle guard wings were burned by the Walker Fire and are proposed for replacement to control range livestock distribution (1988 PNF LRMP, p. 4-110). Three drift fences would be extended by approximately 200 feet to compensate for dense trees and shrubs burned in the fire that previously served as natural barrier. With an estimated 6-foot-wide disturbance area, fixing 23 miles of fence could disturb 17 acres of habitat. Fencing has been designed with a smooth bottom wire so that deer and wolves can cross under the fence without cutting their skin.

There are eleven water catchment devices (wildlife guzzlers) that were burned in the Walker Fire and need to be replaced. These devices were placed on ridges and other areas that do not have alternate water sources nearby. The purpose of guzzlers is to enhance summer habitat quality that would be otherwise under-utilized by wildlife species, particularly deer.

Table 1: Summary of Proposed Actions – Walker Fire Rehabilitation Project

Proposed Action	Activities*	Approximate acres (rounded)
Salvage Harvest		**4200**
	Harvest all dead trees and harvest live trees that have a 70% chance of mortality or greater.	
Replace/Repair Livestock Fencing		**17**
	Approximately twenty-three miles of range fencing, four water systems, and three cattle guard wings. Area disturbed = 17 acres.	
Replace destroyed Wildlife Water Catchment Tanks (Guzzlers)		**1**
	Replace 11 rainwater catchment devices (guzzlers) that were destroyed in the Walker Fire.	
Total Acreage (Including Overlapping Treatments)		**4218**

**Treatment activities are defined on the following page. These treatments would occur in some combination over time and all activities may not be used on every acre or stand proposed for treatment. More detail regarding the types of treatments, sequences of treatments, and other considerations is included below.*

2020 Plumas National Forest Road and Trail Maintenance Project Activities

This project proposes to maintain 189 miles of National Forest System (NFS) roads and trails (Table 2). Proposed work includes: removing and replacing existing road surfaces, guard rails, signs, and culverts; reshaping road surfaces; cleaning ditches and culverts along maintenance level 5 roads (high degree of user comfort and convenience).

Activities along the Janesville-Frenchman Road (28N01) include grinding up chip seal, asphalt, or pavement and converting the road surface to a gravel. Application of magnesium chloride (a binder) to the new surface is proposed and the maintenance level 5 would change to 3. Activities along the Hungry Creek Road (27N09) include reshaping for drainage and adding gravel to the road's surface.

Activities along maintenance level 2 (use by high-clearance vehicles) and some maintenance level 3 roads (travel by prudent drivers in standard passenger vehicles), and the Lower Indian Creek Camp Site motorized trail (12M15) include grading, culvert and ditch cleaning, ditch pulling, and brushing. Table 2, above, summarizes miles for category of maintenance level.

Activities along the Middle Creek Trail (12E08) include tread width and clearing maintenance consistent specifications for a class 3 (developed trail) managed for pack and saddle trail uses. The tread width would range from 18-24 inches and clearing for this trail would range from 72-96 inches (3-4 feet from centerline).

Hazard tree abatement and/or removal, should hazard trees exist, is proposed for all roads and trails included in this project. Hazard trees would be abated and/or removed along National Forest Service System road and trail prisms when trees have the potential to hit the infrastructure. Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (Smith and Cluck 2011) would be used. Trees ≥12 inches diameter at breast height (DBH) are proposed for removal. To establish ground cover, scattering of trees ≤11 inches DBH and activity generated slash across specific locations within treatment units is proposed. Alternative treatments for smaller trees include grapple piling and burning, chipping, or masticating. Brush pulling and planting native conifer seedlings are proposed.

Table 2: Summary of Proposed Actions - 2020 Plumas National Forest Road and Trail Maintenance Project

Proposed Action	Activities*	Approximate acres
Hazard Tree Felling and Removal		**7,886****
	Remove hazard trees along 189 miles of National Forest System road and trail prisms when trees have the potential to hit the infrastructure. Trees ≥12 inches diameter at breast height (dbh) are proposed for harvest. To establish ground cover scattering of trees ≤11 inches dbh and activity generated slash across specific locations within treatment units is proposed. Alternative treatments for smaller trees include grapple piling and burning, chipping, or masticating. Brush pulling and planting native conifer seedlings are proposed.	
Road Maintenance Activities – Maintenance Level 5 Roads		**96**
	This project includes 56.5 miles of removing and replacing existing road surfaces, guard rails, signs, and culverts; reshaping road surfaces; cleaning ditches and culverts along maintenance level 5 roads (high degree of user comfort and convenience).	
Road Maintenance Activities – Maintenance Level 2 and 3 Roads and 12M15 trail		**216**
	127 miles of activities along maintenance level 2 (use by high-clearance vehicles) and some maintenance level 3 roads (travel by prudent drivers in standard passenger vehicles), and the Lower Indian Creek motorized trail (12M15) include grading, culvert and ditch cleaning, ditch pulling, and brushing.	
Trail Maintenance Activities – includes 5.5 miles non-motorized trail		**9**
	Activities include managing tread width and clearing for pack and saddle trail uses. Tread width will range from 18-24 inches and clearing will range from 3-4 feet from centerline.	
Total Acreage (Including Overlapping Treatments)		**8,207 acres**

**Treatment activities are defined on the following pages. These treatments would occur in some combination over time and all activities may not be used on every acre or stand proposed for treatment. More detail regarding the types of treatments, sequences of treatments, and other considerations is included below.*

***7,886 acres is the total area proposed for treatment, as hazard tree felling and removal overlaps other road and trail maintenance activities.*

Project Action Area,

Timeline, Direction and Design Features

The Project areas (Figures 1-2) includes large portions of three major drainages, including Indian Creek, Last Chance Creek and Red Clover Creek, as well as smaller portions of other drainages. Action Area is defined as all areas proposed for treatment and all adjacent areas potentially impacted by proposed activities. Proposed activities will occur in the next five years, with implementation beginning in 2020 and expected end date of December 31, 2025. This analysis assumes that multiple activities could occur within each treatment unit. Usually, but not always, one type of treatment (e.g., salvage) would occur during a single year, with one or more follow up treatments (e.g., prescribed fire or pile burning), occurring one or more years later, with follow-up tree planting.

The Forest Service used the best available information for identifying dead and dying trees for salvage purposes as developed by the Pacific Southwest Region Forest Health Protection Staff (USDA 2004b, p. 52). An evaluation of the Walker Fire was conducted by Danny Cluck, Forest Health Protection Entomologist, on November 7, 2019. The objective of the evaluation was to identify levels of fire injury to conifers, note any insect activity, and discuss variables that should be considered when developing fire-injured tree and hazard tree marking guidelines. Marking Guidelines for Fire-Injured Trees in California (Smith and Cluck 2011) will be used in proposed actions. All fire-killed and fire injured trees, with a 70 percent probability of mortality, in treatment areas will be marked for removal or felled to mitigate safety concerns.

During salvage operations, the Forest Service will retain all large hardwoods on the westside except where 1) large trees pose an immediate threat to human life or property or 2) losses of large trees are incurred due to prescribed or wildland fire. Large montane hardwoods are trees 12 inches or greater dbh (USDA 2004b, p. 53). Forest Service direction explicitly promote(s) hardwoods after stand replacing events (USDA 2004b, p. 53).

Forest Service snag retention levels may be determined on an individual project basis for vegetation treatments. When determining snag retention levels and locations, safety and operability, land allocation, desired condition, landscape position, potential prescribed burning and fire suppression line locations, and site conditions (such as riparian areas and ridge tops) are considered, avoiding uniformity across large areas. A general guideline for large-snag retention in westside mixed conifer and ponderosa pine types is four of the largest snags per acre, while red fir forest types is six of the largest snags per acre (USDA 2004b, p. 51). East side pine and mixed conifer forest type retain three of the largest snags per acre (USDA 2004b, p. 51).

For all proposed activities under both projects, the Forest Service will implement standard management requirements and project-specific design criteria to reduce unintended project implementation effects. Table 3 provides standard management practices and project-specific conservation measures for the Sierra Nevada Yellow-legged Frog, and conservation measures for gray wolf are listed on pages 28-29.

Table 3: Sierra Nevada yellow-legged frog conservation measures

Activity	Suitable, Unoccupied Habitat	Occupied Habitat (no known occupied habitat within treatment units)
Revegetation	To protect water quality and riparian habitat for aquatic organisms, within 50 feet of perennial or seasonal streams, if treatment reduces groundcover to less than 75 percent for a contiguous area of greater than 0.25 acre, then mulching and/or revegetation may be required to minimize erosion and reestablish native vegetation. Only native plant species will be used in revegetation. All mulch and seed material will be certified weed-free.	
All	Weed free rice straw and native grass seed shall be used for erosion control or other purposes within Sierra Nevada yellow-legged frog habitat, regardless of occupancy, to ensure that individual frogs do	

	not get trapped, injured or killed. Plastic mono-filament netting or similar material will not be used at any of these projects because *R. sierrae* may become entangled or trapped in it.	
All	Within areas of suitable habitat where heavy equipment use would occur, Sierra Nevada yellow-legged frog habitat occupancy will be assessed annually by the Forest Service. Occupancy will be determined through surveys by the Forest Service or qualified biologists. The qualified biologist will have documented training in the biology and field identification of frogs in addition to demonstrable experience surveying for and positively identifying Sierra Nevada yellow- legged frogs. The survey will cover all suitable habitat areas. Should any life stages of the species be found (i.e. the site is occupied), work activities for that area will occur during the limited operating period suggested by the Forest Service conservation measures.	No known occupied habitat occurs in this project. If during the surveys, any life stages of the Sierra Nevada yellow-legged frog are found, the project activities will stop, the Forest Service will create a 750 feet buffer upstream and downstream from the frog detection point, and 82 feet wide minimum on both sides of the stream would not be treated with mechanical methods. Hand treatment may still occur but no piles would be built within 82 feet of the stream. Road decommissioning and culvert replacement would occur after surveys confirm there are no frogs within 500 feet of proposed activities. Surveys would be valid for 5 days. In the event a Sierra Nevada yellow-legged frog is detected in the vicinity of in-stream work, the frog would be relocated to a safe place during watershed enhancement activities to prevent mortality after approval from USFWS.
Heavy Equipment including harvest equipment, road building equipment, mastication equipment, etc.	Will not be utilized within 82 feet of streams that have suitable habitat for Sierra Nevada yellow-legged frog, except for project activities on existing roads and stream crossings. Limited (approximately 5) new temporary stream crossings will be created.	Will not be utilized within 82 feet of streams, and 750 feet upstream and downstream that are occupied by Sierra Nevada yellow-legged frog. For road and stream crossing activities within this zone, prior approval from USFWS would be required.
Prescribed fire and pile burning	All suitable habitat will be surveyed where pile burning is planned within 82 feet of the stream. In areas without known occupancy, piles to be burned would be built outside of a 50-foot riparian buffer on intermittent and perennial streams.	No prescribed fire or pile burning will be done within 82 feet of unoccupied perennial or intermittent streams, and 750 feet upstream and downstream of sites identified as occupied.
Fueling of gas-powered equipment with gas tanks larger than 5 gallons	Will not occur within 150 feet of surface waters, except at existing facilities.	No fueling of gas-powered equipment will occur within 500 feet of sites occupied by *R. sierrae*.
Fueling of gas-powered equipment less than 5 gallons	Will not occur within 25 feet of surface waters, except at existing facilities.	No fueling of gas-powered equipment will occur within 500 feet of sites occupied by *R. sierrae*.

IV. STATUS OF THE SPECIES AND HABITAT IN THE ACTION AREA

Potential impacts of both Walker Fire Projects on Sierra Nevada yellow-legged frog, gray wolf and their habitats were analyzed under this biological assessment. Each species is described below, followed by the environmental effects section and the determination. Suitable habitat for each species was assessed within both action areas (Table 4) and by treatment type (Table 5). Both action areas are assumed to be suitable wolf habitat, and Sierra Nevada yellow-legged frog suitable habitat is defined as perennial and intermittent aquatic habitat and upland areas extending 82 ft (25 m) from the stream bank or shoreline for both Walker Fire Projects.

Sierra Nevada Yellow-Legged Frog (*Rana sierrae*)

Rana sierrae is a federally endangered species that is endemic to California. *Rana sierrae* were once extremely abundant throughout their range, but have exhibited a rapid 95% decline in wild populations (Briggs, Knapp, and Vredenburg, 2010). In 2014, the USFWS classified *R. sierrae* as endangered under the Federal Endangered

Species Act (USFWS 2014a; Federal Register, Vol. 79, No. 82. April 29, 2014). Most populations of *R. sierrae* occur primarily on public lands, including the El Dorado, Inyo, Lassen, Plumas, Sierra, Stanislaus, Tahoe, and Lake Tahoe Basin National Forests. The Plumas National Forest possesses one of the northernmost extant wild populations of *R. sierrae*. While typically found in alpine lakes through much of their southern range in the Sierra Nevada, on the Plumas National Forest *R. sierrae* are typically found in perennial and intermittent streams above 4,500 feet, forming small, isolated populations which suffer from a relatively high risk of local extinction.

Table 4. Acres of suitable habitat within action areas.

Acres	Area (acres)	Wolf Suitable Habitat (acres)	Sierra Nevada Yellow-legged Frog Suitable Habitat (acres)
Walker Fire Rehabilitation Project Action Area	58,787	58,787	4,015
Walker Fire Rehabilitation Project Treatment Area	4,218	4,218	269
2020 PNF Road and Trail Maintenance Project Action Area	71,235	70,394	4,335
2020 PNF Road and Trail Maintenance Project Treatment Area	7,886	7,886	769

Table 5. Acres of suitable habitat within each treatment type.

Treatment Type:	Walker Fire Rehabilitation Project	2020 PNF Road and Trail Maintenance Project	Wolf Habitat	*R. sierrae* Suitable Habitat (0-82')
Timber Salvage (Mechanical)	4,200	0	4,200	267
Roadside activities (Mechanical Hazard Tree, culvert cleaning, ditch pulling)	0	7,886	7,886	769
Livestock Range Fence Replacement	17	0	17	2
Wildlife Guzzler Replacement	1	0	1	0
Road Surface Restoration (189 miles)	0	321	321	0
Acres Affected (Action Area):	4,218	7,886	12,104	1,038

*Road surface restoration spatially overlaps roadside activities, and is not included as additional acres in total estimates.

Habitat and Life History

Distribution-wide species account (life history and spatial ecology for the Sierra Nevada yellow-legged frog was provided in the Federal Register and the USDA Forest Service Biological Assessment for the Programmatic Consultation between the Pacific Southwest Region and the Fish and Wildlife Service (79 FR 24255;

FF08ESMF00-2014-F-0557: Programmatic BA, June 16, 2014), and incorporated herein by reference.

Threats/Management Concerns

Risk factors and management concerns were thoroughly reviewed in the Federal Register and the USDA Forest Service Biological Assessment for the Programmatic Consultation between the Pacific Southwest Region and the Fish and Wildlife Service (79 FR 24255; FF08ESMF00-2014-F-0557: Programmatic BA, Pages 31-37, June 16, 2014), and incorporated herein by reference.

Population Status

Sierra Nevada yellow-legged frogs occupy at least seven areas on the Plumas National Forest: Boulder – Lone Rock Creek, Lakes Basin, Slate Creek, Deanes Valley, and three locations in Bucks Lake Wilderness (Bean Creek). Ongoing restoration efforts on the forest are designed to maintain resident populations of Sierra Nevada Yellow-legged Frog. The forest, in collaboration with several partners, is headstarting (eggs and larvae are collected in the field, reared in captivity, treated for chytrid fungus, and released as adults into natal streams) two populations of yellow-legged frog (Bean Creek and Bucks Lake Wilderness), and the forest salvages tadpoles in drying pools in headwater streams (South Fork Rock Creek, Deanes Valley) and conducts mark-recapture monitoring in these populations and the Boulder - Lone Rock Creek population.

Lone Rock Creek represents the nearest extant *Rana sierrae* population to the project area. The nearest frog detection (in a tributary to Lone Rock Creek) is 3.2 linear miles from the Walker Fire Rehabilitation Project Action Area (Figures 3,5), and 210 feet from the 2020 Plumas National Forest Road and Trail Maintenance Project action area (Figures 4-5). Survey efforts in 2019 included 24 surveys to locate eggs or tadpoles. Although no tadpoles or eggs were found in 2019, 6 adults and 5 metamorphs were located. In 2018, survey crews located two adult frogs and a single tadpole in Lone Rock Creek. In 2017, survey crews documented three adult frogs plus subadults and tadpoles in Lone Rock Creek. Frogs also have been detected in Boulder and Pierce Creeks as recently as 2016 (1.9 and 6.1 linear miles from the Action Area, respectively), but population sizes in these two creeks are critically low and current occupancy is unknown. Boulder and Pierce Creek populations may be locally extinct with zero detections in the past 3 years. Current information indicates that all populations of *Rana sierrae* on the Plumas National Forest contain fewer than 100 adult frogs, except perhaps the Goose Lake Population in the Lakes Basin on Beckwourth Ranger District. The forest seeks to expand ongoing headstarting efforts to include the adjacent Rock Creek site; however, the USFS has not yet located egg masses or adequate numbers of tadpoles to initiate head starting in that area as of 2019.

Critical Habitat

On August 24, 2016 Fish and Wildlife Service finalized designation of critical habitat for the Sierra Nevada yellow-legged frog (USFWS 2016; Federal Register, Vol. 81 FR 59045 59119). Based on the current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, the U.S. Fish and Wildlife Service identified three Primary constituent elements (PCEs) for Sierra Nevada yellow-legged frog critical habitat: Aquatic habitat for breeding and rearing (PCE 1), Aquatic nonbreeding habitat (including overwintering habitat; PCE 2), and Upland areas (PCE 3). The Walker Fire Rehabilitation Project does not overlap designated critical habitat for any species (Figure 3). The 2020 PNF Road and Trail Maintenance Project action area overlaps 1,312 acres of the Boulder – Lone Rock Creeks critical habitat unit, with 16 acres of designated critical habitat overlapping treatment units (Figures 4-5). Designated critical habitat overlapping treatment units is not suitable yellow-legged frog habitat and does not contain any PCEs.

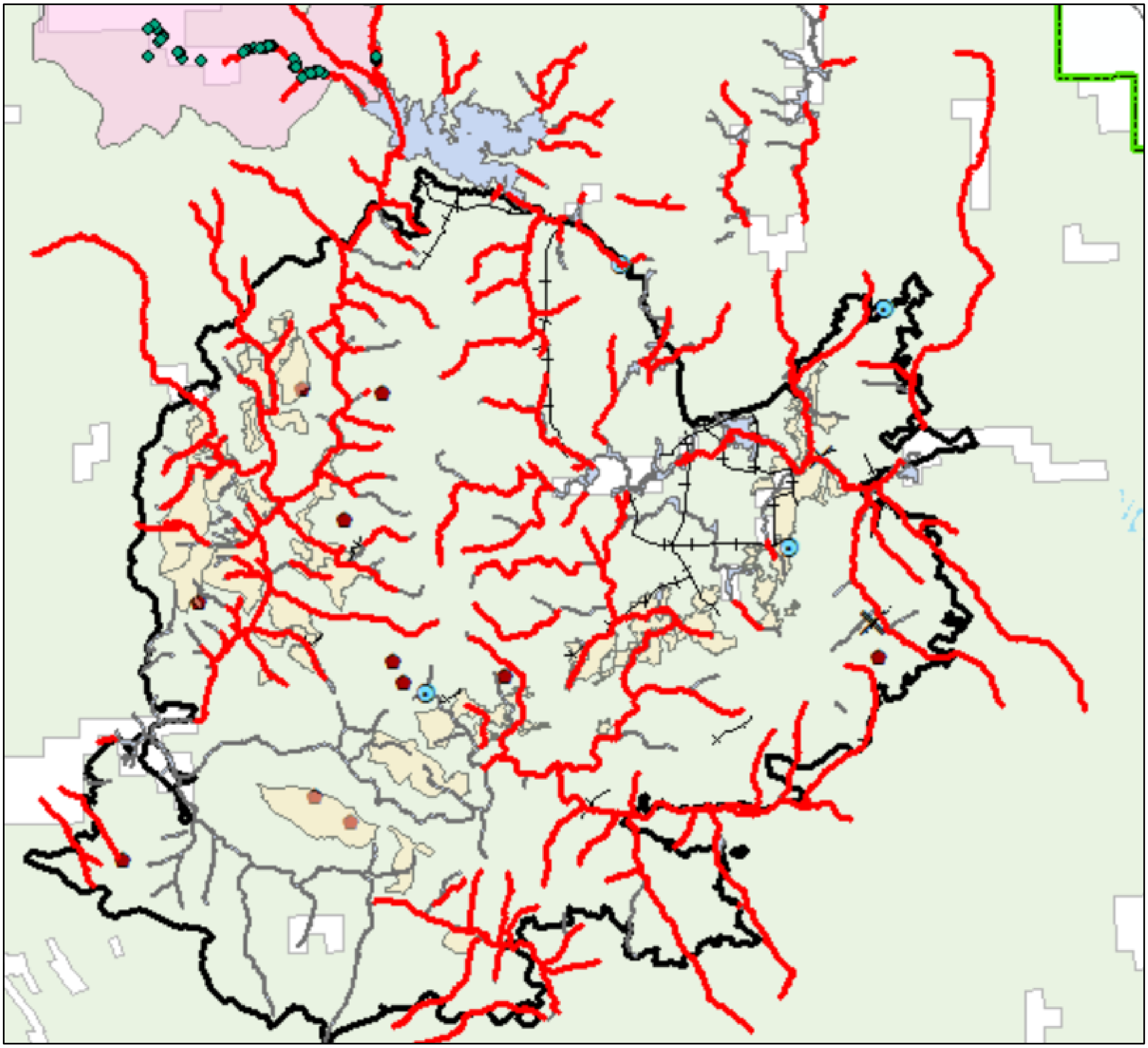

Figure 3. Walker Fire Salvage action area (black perimeter), salvage treatment units (yellow polygons), guzzler locations (maroon pentagon), range water improvement (blue points), range fence improvements (hatched black line), range guard wing (black X), amphibian surveys (red lines), suitable unsurveyed habitat (gray lines), critical habitat (purple polygon) and species observations (green dots).

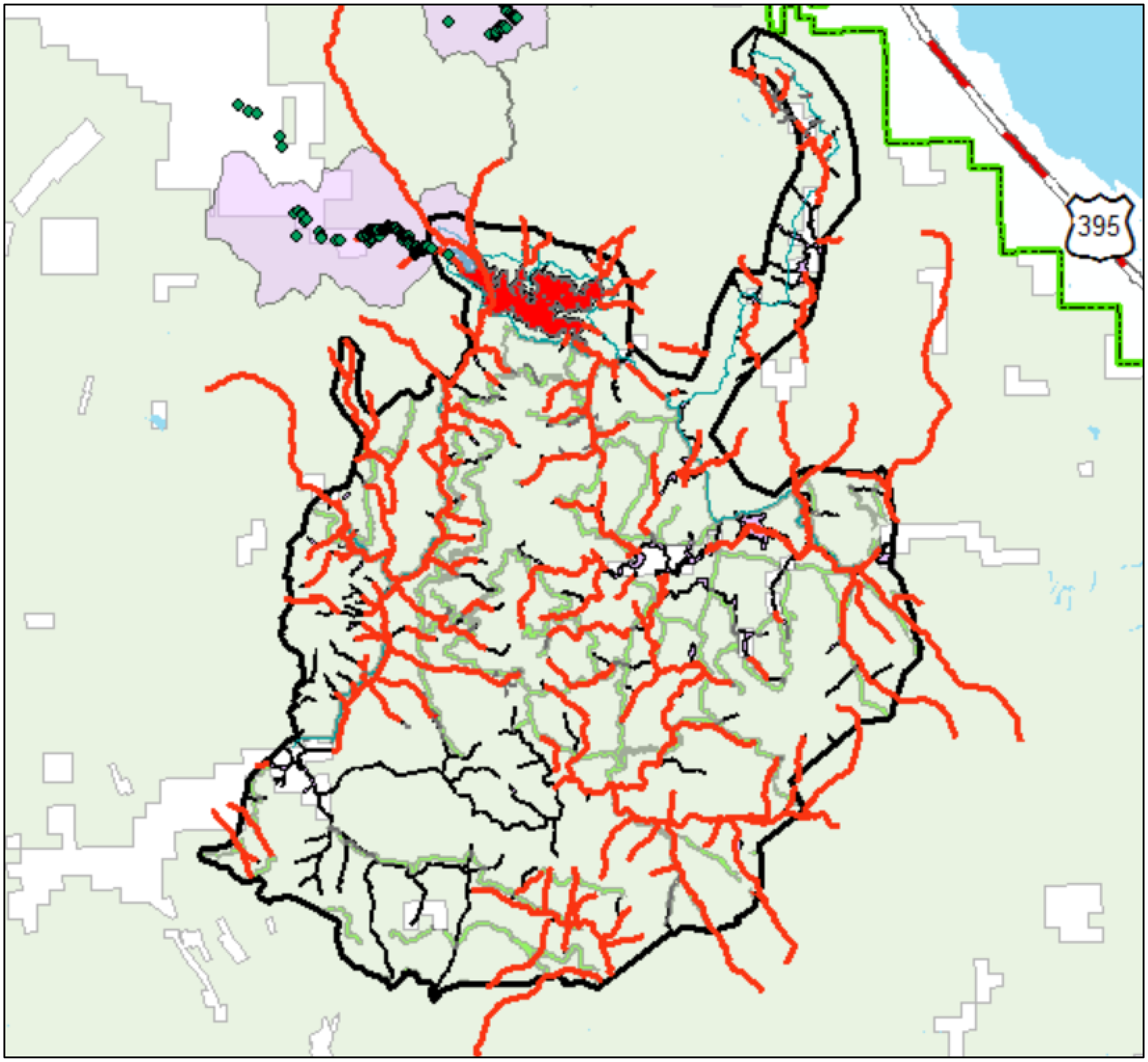

Figure 4. 2020 Plumas National Forest Road and Trail Maintenance action area (black perimeter), roadside hazard treatment units (green lines) and road surface treatments (blue lines), amphibian surveys (red lines), critical habitat (purple polygon) and species observations (green dots). Thin black lines show suitable habitat that has not been surveyed for SNYLF. Light green background is National Forest public ownership and white is other ownership.

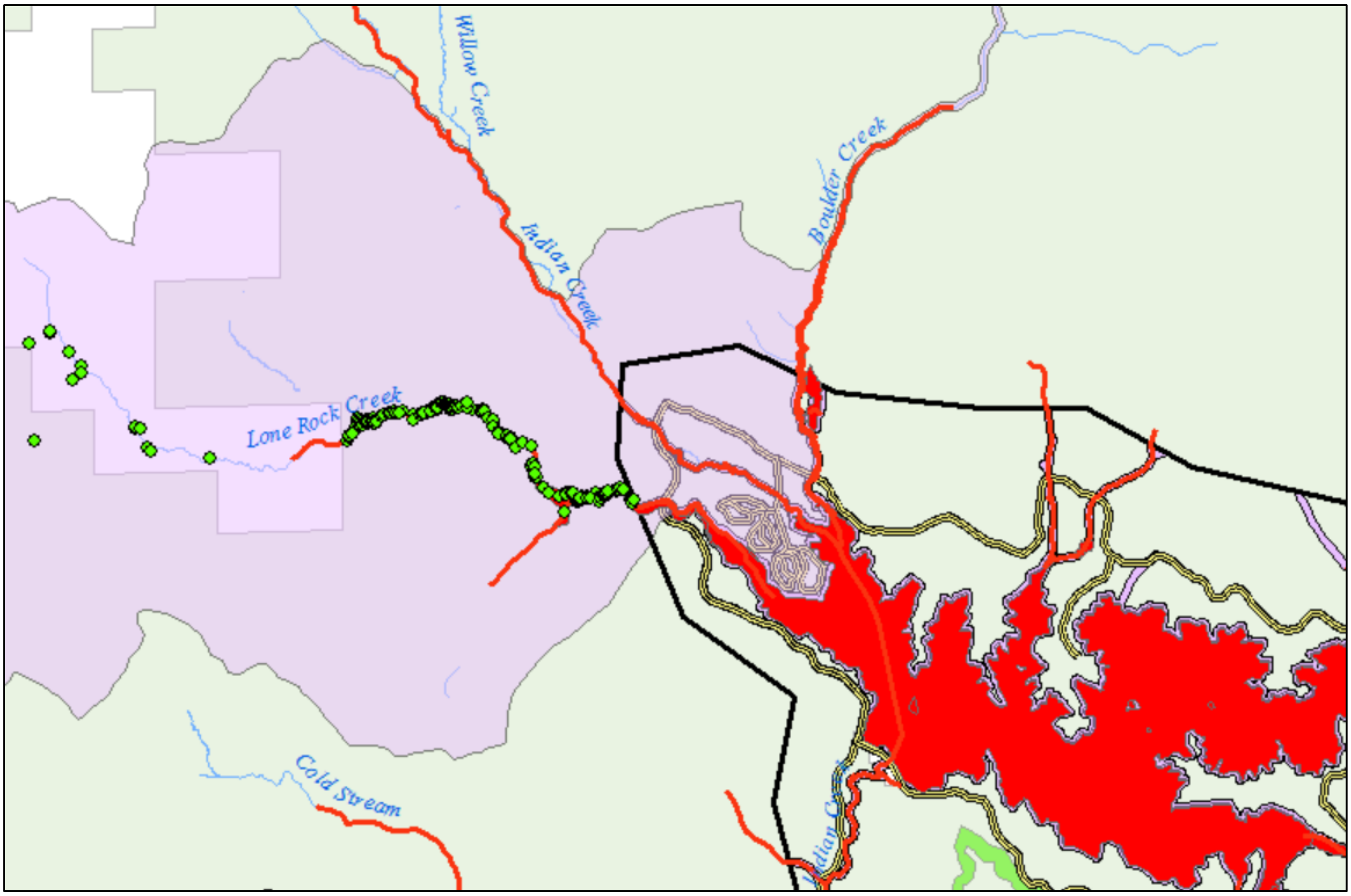

Figure 5 - Map shows enlarged view of NW corner of 2020 Plumas National Forest Road and Trail Maintenance Project where it overlaps with critical habitat. Red lines and polygons are surveyed suitable habitat. Green dots are *Rana sierra*e observations. Yellow/black linear stripes are road surface treatments and green polygon south of Antelope Lake shows proposed roadside hazard removal. All frog locations are upstream of proposed action areas.

Project Surveys

No project specific surveys were conducted, due to the unplanned nature of the Walker Fire and these associated projects. However previous surveys had been conducted in both action areas. Amphibian visual encounter surveys were conducted in a portion of the suitable habitat within the Walker Fire projects following Fellers and Freel 1995 survey protocol. One to three surveys in suitable habitat (2010-2019) failed to detect any *R. sierrae* within the Walker Fire Rehabilitation Project action area (Figure 3). There is a population of *R. sierrae* in Lone Rock Creek, and individuals have been found as close as 210 feet upstream of the Antelope Lake Road, which is included for road surface replacement as part of the 2020 PNF Road and Trail Maintenance Project (Figure 4-5). Boulder Creek also has a population upstream of the action areas, with detections as recently as 2016. All surveys reported here are surveys conducted in the past 10 years for other projects in the Walker Fire projects area. There were 597 kilometers (373 miles) of streams surveyed in the 2020 Plumas National Forest Road and Trail Maintenance action area and 476 kilometers (298 miles) of streams surveyed in the Walker Fire

Rehabilitation Project action area. This survey distance includes survey overlap (i.e. if the same stream segment were surveyed twice, the distance of survey was duplicated). Due to the lack of historic records in the project action area, it is thought that *R. sierrae* may not occupy the project area. Both fish (trout) and aquatic invasive species (signal crayfish) were observed during the surveys.

Environmental Effects

General Methods

The Walker Fire Rehabilitation Project Action Area (58,787 acres) is the Walker Fire perimeter, contains all proposed activities, and includes all or portions of nine HUC-6 level-12 subwatersheds (Hungry Creek, Cold Stream-Indian Creek, Ward Creek-Indian Creek, Willow Creek-Last Chance Creek, Lower Red Clover Creek, Poison Creek-Last Chance Creek, Cottonwood Creek, Antelope Creek, and Squaw Queen Creek, Figures 1,3,6). The 2020 Plumas National Forest Road and Trail Maintenance Project action area is relatively larger (71,325 acres) as it includes travel routes outside of the Walker Fire perimeter (Figures 2,4), and it includes the same nine subwatersheds plus four additional subwatersheds (Boulder Creek, Lone Rock Creek-Indian Creek, McDermott Creek-Frontal Honey Lake and Clark's Creek, Figure 6). Within the Walker Fire Rehabilitation project action area there are 4,015 acres of suitable habitat, and no recent or historic detections of *Rana sierrae*. Within the 2020 Plumas National Forest Road and Trail Maintenance Project Walker Fire Rehabilitation project action area there are 7,886 acres of suitable habitat, and *Rana sierra* occupy Lone Rock Creek upstream of the action area. There are 12,104 acres proposed for treatment within the Walker Fire projects (Tables 1-2, Figures 1-4), and 1,038 acres of these acres are suitable habitat (Table 4-5). Acres of *Rana sierrae* suitable habitat were quantified for each action area and treatment type (Table 4-5). All water features (i.e., suitable habitat) were delineated and measured using the U.S.G.S. National Hydrography Dataset and ArcGIS software version 10.5.1.

Critical Habitat

The Walker Fire Rehabilitation Project action area is outside of designated critical habitat for *Rana sierrae* and is disconnected from any known populations (Figure 3), with the nearest population (3.2 linear miles away) in a separate watershed separated by mountainous ridges and Antelope Lake and Dam (Figure 3,5-6). It is unlikely that a highly aquatic species such as *R. sierrae* would cross from these adjacent watersheds, even in winter months when frogs may move further overland. It is unlikely that *R. sierrae* would disperse into the project area by moving down Indian Creek, as they would have to navigate past Antelope Lake, which has many predators (both native and non-native) which would reduce the likelihood of success at such a large movement. Additionally, *R. sierrae* would have to descend Indian Creek (to approximately 4,000' elevation) and then move up either Hungry Creek, Last Chance Creek or Red Clover Creek before reaching the action area. It is therefore unlikely that the suitable habitat within the action area would become occupied during the implementation of the project.

The 2020 Plumas National Forest Road and Trail Maintenance Project action area contains 1,312 acres of designated critical habitat for *Rana sierrae.* The proposed roadside hazard tree removal under this project is disconnected from any known populations. The discussion above for the Walker Fire Rehabilitation Project applies for the roadside hazard portion of the 2020 Plumas National Forest Road and Trail Maintenance Project. Level 5 paved roads within the action area (Antelope Lake Road, Fruitgrowers Boulevard and Antelope Lake Campground roads) are within designated Critical Habitat, and this project proposed removing and replacing existing road surfaces, guard rails and signs, and cleaning ditches and culverts (such as removing sticks and logs that block the culvert entrance). The project does not include replacing culverts at Lone Rock or Boulder Creeks (occupied streams). No in stream work is proposed in critical habitat. Suitable habitat within designated critical habitat would not be impacted by the proposed actions, and therefore, no effects to designated critical habitat are anticipated.

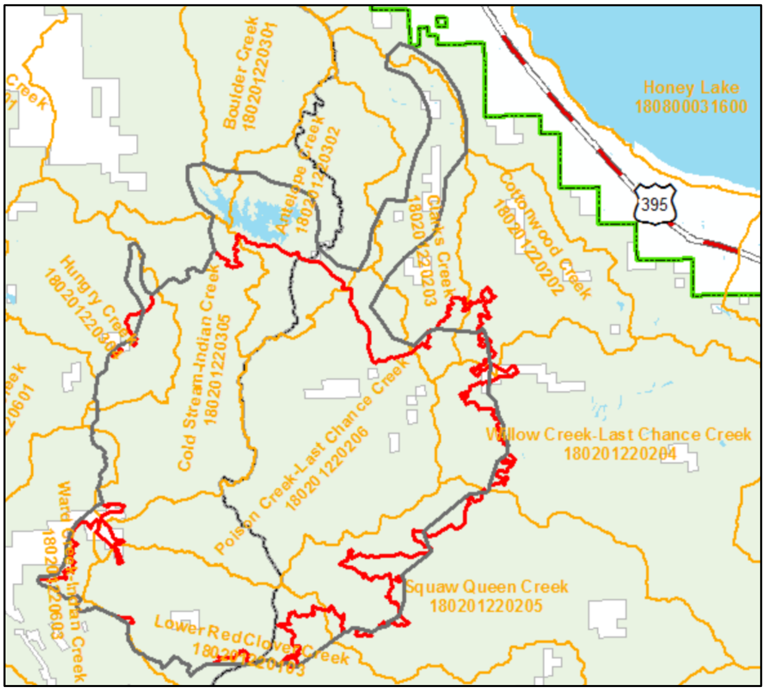

Figure 6 – Subwatersheds (HUC-6, level-12) boundaries in the Walker Fire Rehabilitation Project (red polygon) and 2020 Plumas National Forest Road and Trail Maintenance Project (gray polygons) action areas.

Other Key Assumptions:

- The existing condition of high severity fire areas within the Walker Fire is poor and these sites will continue to contribute high amounts of sediment to aquatic habitats and thereby adversely affect Sierra Nevada yellow-legged frog habitat.
- Project vegetation treatment will increase soil mobility and cause increased sedimentation.
- After the Project is fully implemented the sedimentation caused by both system and non-system roads will decrease, and the condition of aquatic habitats will improve.
- Sierra Nevada yellow-legged frogs surveys are extensive in the Walker Fire projects area. No Sierra Nevada yellow-legged frogs have been detected in the Walker Fire perimeter, where timber salvage is proposed. Although possible, SNYLF presence is highly unlikely in the Walker Fire perimeter. Although unlikely, it is assumed that *R. sierrae* could both be present in unsurveyed habitat and/or move into previously unoccupied habitat during the project implementation timeframe.

The standards and guidelines (S&Gs), best management practices (BMPs), project-specific design features, and terms and conditions prescribed in the USFWS programmatic biological opinion (USFWS 2014) will be implemented to minimize the Project's adverse effects to the Sierra Nevada yellow-legged frog.

Direct and Indirect Effects

There are approximately 269 acres of Sierra Nevada yellow-legged frog suitable habitat within the Walker Fire Rehabilitation treatment area and 769 acres of suitable habitat within the 2020 Plumas National Forest Road and Trail Maintenance Project treatment area (Table 5). Heavy equipment use would not be permitted within 82 feet of aquatic features in suitable habitat, except for very limited stream crossings (up to 5), and only after preproject surveys do not detect SNYLF. Treatments within 82 feet of aquatic features will be limited to felling of hazard trees that will be directionally felled away from streams whenever possible. There would be instances when hazard trees cannot physically be felled away from streams due to lean or other factors. When these trees pose an unacceptable hazard to the public using existing roads, the trees would be felled in a manner that has the least direct impacts to the stream.

Rana sierrae are presumed to be absent from the project area based on pre-implementation survey results, and potential negative project effects on suitable Sierra Nevada yellow-legged frog habitat are expected to be short-term (a few years) with potential long-term benefits from road maintenance and tree planting beginning within a few years post-project implementation. This analysis relies on the numerous protective measures that are expected to substantially minimize the chance of negative effects in near-water habitats, particularly within the suitable habitat.

The direct effects of the proposed actions on *R. sierrae* and their habitat would be limited to the Project's implementation phase (a few years). Indirect effects such as vegetation modification through tree planting could last well-beyond the implementation period. The exact duration of indirect effects would depend on the timescale in which the proposed activities are implemented, coupled with the conditions when they are implemented in (e.g., early season vs. late season, high vs. low water years, etc.).

Vegetation Treatment Project Element

<u>Mechanical timber salvage</u> (Walker Fire Rehabilitation Project)

<u>Mechanical hazard tree removal</u> (2020 PNF Road and Trail Maintenance Project)

Potential effects from activities associated with vegetation management were outline in the Programmatic BA, as were best management practices (BMPs) and standards and guidelines (S&Gs) implemented at the project level to reduce negative impacts to individual frogs and habitat (Pages 12-13, 37-48, June 16, 2014). Aside from specific amphibian conservation measure (Table 3), The Walker Fire projects incorporates all applicable project design features and applicable Best Management Practices from the programmatic "Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged frog, and Threatened Yosemite Toad (USDI, 2014b).

Heavy equipment use (e.g., salvage logging using feller-buncher equipment, biomass removal, grapple piling, landing use) would generally not be allowed within 82 feet of suitable aquatic habitat. A limited amount of road work at stream crossings for culvert repair and cleaning would allow heavy equipment within suitable habitat. The Sierra Nevada yellow-legged frog is highly aquatic, therefore the risk of direct injury from heavy equipment is generally minimal/absent as equipment does not operate within or immediately adjacent to the stream channel. Though quantifiable data regarding sub-lethal effects is not well known for this species, it is logical to assume that some level of behavioral modification (e.g., basking, feeding) could be influenced by mechanized equipment usage, even at some distance from occupied habitat. *R. sierrae* were not found in the project area during historic surveys; however, if the species is found during the implementation phase additional protective measures would be taken after notification/consultation with USFWS.

Indirect effects such as sediment mobilization and shade/temperature changes can occur with near-stream heavy equipment use. These effects are expected to be absent/minimal in nearly all areas due to project design features. Short-term sediment mobilization could occur due to road work and culvert cleaning, with a long-term decrease expected due to improved drainage. Though measurable sediment increase is possible in salvage and hazard tree removal units, project design features would be implemented to limit sediment delivery to streams.

Riparian structure that provides habitat complexity (e.g., logs/debris) is not expected to change due to riparian buffers. Although the net effect of these habitat changes is not known for *R. sierrae*, it is highly unlikely to have any effect as the entire project area is thought to be unoccupied due to historic surveys.

Road and Trail Maintenance Project Element

Culvert cleaning (2020 PNF Road and Trail Maintenance Project)
Ditch pulling (2020 PNF Road and Trail Maintenance Project)
Road surface restoration (2020 PNF Road and Trail Maintenance Project)
Potential effects from activities associated with transportation system management were described in the Programmatic BA, as were BMPs and S&Gs implemented at the project level to reduce negative impacts to individual SNYLFs and habitat (Pages 13-16, 48-53, June 16, 2014). Proposed transportation system management will adhere to all BMPs and S&Gs presented in the Programmatic BA. Potential transportation management impacts to SNYLF suitable habitat (e.g., increased sediment delivery to aquatic features) will be temporally punctuated, and spatially restricted with beneficial effects to habitat in the short- (<5 years) and long-term. The project would not include instream work in Lone Rock or Boulder Creeks, the only sites where SNYLF populations are known. Heavy equipment use would generally not be allowed within 82 feet of suitable aquatic habitat (perennial and intermittent streams). A limited amount of road work at stream crossings for culvert repair and cleaning and road decommissioning would allow heavy equipment within suitable habitat. Road treatment causes some degree of temporary ground disturbance (Lugo and Gucinski 2000). As a result, short-term increases in sediment deposition and turbidity are expected in aquatic habitats immediately downstream of the Project's 189 miles of system road maintenance, ditch pulling and culvert cleaning. Although road maintenance may have temporary short-term negative effects on sediment delivery, it is expected to have long-term reduction in sediment delivery due to prevention of culvert failure and road failure. As most of these intermittent streams feature long dry sections, the likelihood of the proposed work negatively impacting aquatic wildlife during implementation is minimal.

Range and Wildlife Restoration Element

Livestock Range Fence and Cattle Guard Replacement (Walker Fire Rehabilitation Project)
Potential effects from activities associated with range management were described in the Programmatic BA, as were BMPs and S&Gs implemented at the project level to reduce negative impacts to individual SNYLFs and habitat (Pages 12-13 and 55-60, June 16, 2014). Cattle guard replacement is on the existing road network and implementation (removal and installation) will not effect frogs or their habitats. Fence extension (200 feet) and replacement are low impact activities on the landscape and only overlap 2 acres of unoccupied frog habitat (Table 5). Fencing has been designed with a smooth bottom wire so that deer and wolves can cross under the fence without cutting their skin.

Wildlife Guzzler Replacement (Walker Fire Rehabilitation Project)
Replacing wildlife guzzlers involves using a pick-up truck and trailer to transport guzzlers to the installation sites via Forest Service System roads and hand preparation of the site, i.e., removing old guzzler by hand and using shovels and picks to stabilize the guzzler. All activities will occur outside of suitable habitat and will not effect Sierra Nevada yellow-legged frog or their habitat.

Conservation Measures

In addition to ensuring that the Project's proposed actions are executed in compliance with the Sierra Nevada Forest Plan (USDA 2004a, 2004b), proposed activities will be implemented using all pertinent standards and guidelines (S&Gs), best management practices (BMPs), project-specific design features (Table 3), and terms and conditions outlined in the USFWS programmatic biological opinion on nine forest programs on nine national forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Yosemite Toad (USFWS 2014).

Environmental Baseline and Cumulative Effects

The action area of the Walker Fire Projects has been impacted by multiple wildfire several times in the past 20 years (see Figure 7). The Stream Fire burned in 2001, the Boulder fire in 2006, Antelope Fire Complex in 2007, the Moonlight Fire in 2007, and the Walker Fire in 2019. These fires had large proportions that burned at high severity and had assessments completed analyzing fire effects and effectiveness of fuel treatments. The Stream fire burned 3,526 acres in 2001 (Murphy et al. 2010). The Boulder Complex burned 2,920 acres in 2006 (Murphy et al. 2010). The Antelope Fire Complex in 2007 burned 23,420 acres (Fites et al. 2007). The Moonlight Fire burned 64,997 acres in September 2007 (Dailey et al. 2008). These fires impacted Indian Creek as well as portions of other major tributaries in the project areas. The majority of Indian Creek in the project area is now in a deforested condition. The cumulative impacts of these fires may be more than *Rana sierrae* could withstand. Indian Creek also has small mining projects, impacts from sediment delivered by road systems, extensive grazing throughout the watershed, timber harvest and fuel reduction projects. The cumulative environmental effect of the proposed salvage treatments will be reduced fuels, reduced vegetation cover and short-term increased sedimentation to streams. Due to product design features, the salvage activities should pose a minimal risk to *R. sierrae.* Planned tree planting may provide long-term benefits by restoring ecosystem functions to the project area. Planned road and trail maintenance activities may provide long-term benefits by reducing chronic sedimentation issues from road surface erosion and culvert failures. Because of SNYLF highly aquatic nature, upland forest treatments and road surface work would be low-risk threats.

It is possible that non-federal actions could occur on private lands within the project action area that may add to the Project's effects on the suitable habitat of *R. sierrae*. There are 1421 acres of non-Forest Service land within the Walker Fire perimeter. Quantifiable data regarding land use in this area was not available for this analysis. This area was burned in the Walker Fire, and similar timber salvage projects may occur.

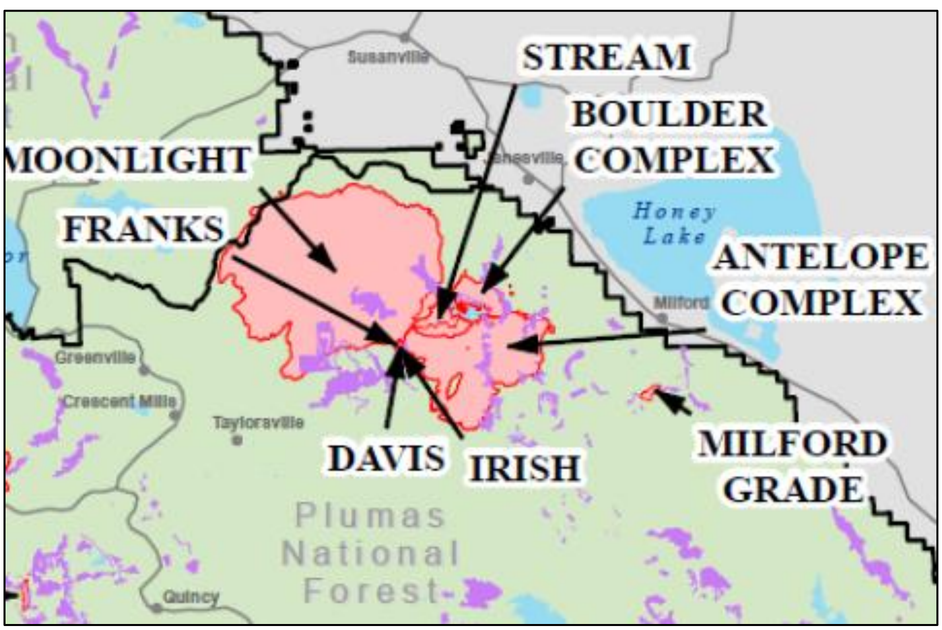

Figure 7 - Multiple large scale wildfires have impacted the Walker Fire Projects area in the past 20 years. Purple areas are fuel reduction treatments (borrowed from Murphy et al. 2000).

Interdependent and Interrelated Actions

The proposed Walker Fire Projects have independent utility and are not dependent on implementation of other projects. The project areas fall within both the planning areas of the Moonlight Fire Restoration environmental assessment and the Plumas Audubon Genesee Wildfire Restoration Plan. Wildlife Protected Activity Center (PAC) treatments from the Moonlight Restoration project are slated for land directly adjacent to the west and east of Walker Fire Rehabilitation Project. The Franks Valley Project is located west of the Walker Fire Rehabilitation project area, to reduce fuels, improve forest ability to fight insects and disease, improve wildlife habitat, and to protect homes in Franks Valley from wildfire. Other ongoing or future forest projects within the surrounding area either have been or will be submitted for formal or informal consultation as necessary.

Species Determination

The Walker Fire Salvage Project **May Affect, and is likely to adversely affect the Sierra Nevada yellow-legged frog.** The project would impact approximately 269 acres of suitable frog habitat; however, habitat does not appear to have ever been occupied by frogs, based on historic records. Because there is suitable habitat present that has never been surveyed, occupancy is possible. Occupancy within suitable habitat in the action area will be assessed annually throughout project implementation. Should any life stages of the species be found (i.e. the site becomes occupied), work activities will occur during the limited operating period identified in project conservation measures. Thus, the project is not likely to directly affect individual frogs. Project design features, conservation measures, BMP's, Standards and Guidelines, and survey requirements are expected to prevent/minimize direct injury/death of individual frogs that could immigrate to the action area during implementation. Short-term increases in sedimentation and turbidity may occur in aquatic habitats, but implementation of project design features and conservation measures will partially mitigate potential negative impacts to frog habitat.

The 2020 Plumas National Forest Road and Trail Maintenance project **May Affect, and is likely to adversely affect the Sierra Nevada yellow-legged frog.** The project would impact approximately 769 acres of suitable frog habitat; however, affected habitat is not known to be occupied by frogs, based on historic records. Frogs that occupy Lone Rock Creek and Boulder Creek would not be impacted by the proposed project. Because there is suitable habitat present that has never been surveyed, occupancy is possible. Occupancy within suitable habitat in the action area will be assessed annually throughout project implementation. Should any life stages of the species be found (i.e. the site becomes occupied), work activities will occur during the limited operating period identified in project conservation measures. Thus, the project is not likely to directly affect individual frogs. Project design features, conservation measures, BMP's, Standards and Guidelines, and survey requirements are expected to prevent/minimize direct injury/death of individual frogs that could immigrate to the action area during implementation. Short-term increases in sedimentation and turbidity may occur in aquatic habitats, but implementation of project design features and conservation measures will partially mitigate potential negative impacts to frog habitat. Road maintenance projects have potential long-term benefits to frog habitat (i.e., long-term stream quality improvement via road system improvements).

Critical Habitat Determination

The Walker Fire Salvage Project does not overlap and will have **no effect on designated critical habitat**.

The 2020 Plumas National Forest Road and Trail Maintenance project overlaps critical habitat, but it does not fall within suitable habitat. The proposed activities will not impact habitat primary constituent elements and will have **no effect on designated critical habitat**.

Gray Wolf (*Canis lupus*)

Gray wolves historically occurred throughout the contiguous United States including California. The Fish and Wildlife classified the gray wolf as endangered and designated the species' critical habitat in 1978 (43 FR 9607). No critical habitat occurs in California. Although the species was likely extirpated from California during the 1920s, the gray wolf is now recolonizing California via dispersal from populations in other states. Wolf reproduction (denning) has been documented in the Shasta-Trinity and Lassen National Forests.

Habitat and Life History

Gray wolves are habitat generalists occupying a variety of plant communities, typically containing a mix of forested and open areas within a variety of topographic features. Historically, they occupied a broad spectrum of habitats including grasslands, sagebrush steppe, and coniferous, mixed, and alpine forests. They have extensive home ranges and prefer areas with few roads, generally avoiding areas with an open road density greater than 1.0 mile per square mile (Witmer et al. 1998).

Wolves are strongly territorial, defending an area of 75 to 150 square miles, with home range size and location determined primarily by abundance of prey (USFWS 1987). Wolves are generally limited by prey availability and threatened by human disturbance. Land management activities may be compatible with wolf protection and recovery when management actions maintain viable ungulate populations on the landscape. During all seasons, ungulates constitute the highest percentage of biomass (USFWS 1987). Because they are an important prey item, factors affecting ungulate distribution and abundance (e.g., habitat use and management, winter range productivity) also affect wolves. Mule deer can be expected to provide the most frequent foraging opportunities for wolves on the Plumas National Forest because they are the most numerous and accessible ungulate.

Dens are usually located on moderately steep slopes with southerly aspect near surface water. Rendezvous sites, used for resting and gathering, are complexes of wet thicket adjacent to timber and near water. Both dens and rendezvous sites are often characterized by having nearby forest cover remote from human disturbance. Wolves may exhibit den site fidelity from year to year, or they may maintain several den sites used in different years (USFWS 1987). Wolf packs appear sensitive to human disturbance near den sites and may abandon the site (Ballard et al. 1987).

Rendezvous sites refer to specific resting and gathering areas wolves use during the summer and early fall. Several rendezvous sites may be used by a pack, generally located between 1 to 6 miles from the natal den. A pack uses rendezvous sites until pups are mature enough to travel with adults, generally early autumn. Wolf response to human disturbance is due to a variety of factors including specific setting, individuality of wolves, and whether the population is exploited or protected (USFWS 1987). Because CDFW biologists routinely monitor GPS collared wolves on the Plumas National Forest and visit areas used by wolves (CDFW 2018b), the locations of den and rendezvous sites will likely be readily identified.

Threats/Management Concerns

Effects to gray wolves are assessed in terms of threats to wolves through human contact and conflict (i.e., livestock or grazing concerns), through activities that compromise denning or rendezvous sites, or through activities that affect prey base. Wolves initially experienced population declines due to conflicts with humans. This included human settlement, direct conflict with livestock, and a lack of understanding of wolf ecology and habits as well as subsequent eradication programs (USFWS 1987). Today, human conflict still exists, most notably over livestock depredations and the associated economic losses.

Local Information

Gray wolf occupies the northern portion of Plumas National Forest (Mount Hough and Beckwourth Ranger Districts). Wolf activity on Plumas National Forest currently ranges from the forest boundary near Lake Almanor (see Figure 8 for photograph of one wolf in 2017), south along the east shore of the lake to approximately Mt Hough, Grizzly Mountain, Turner Ridge, and Antelope Lake (CDFW 2020). The Lassen pack has reproduced annually (2017-2019), denning on adjacent Lassen National Forest lands. The pack produced 4 pups in 2017, 5 pups in 2018 and 4 pups in 2019. Current pack size is estimated at two adults, one yearling and four pups, and there also are multiple singleton wolves (i.e., dispersers) using Plumas National Forest that are not associated with the Lassen pack (CDFW 2020). Despite broad use of the forest, no den or rendezvous sites have been observed in the Plumas National Forest. The Lassen pack appears to use a greater amount of the Plumas National Forest during summer months compared to winter range use, with winter range approximately a third the size of summer range; however, wolves made larger movements over a larger area during winter 2018-2019 compared to 2017-2018 (Laudon 2019). Wolves use relatively lower elevation sites during winter on Plumas National Forest, where deer also congregate; however, wolves have made multiple forays during winter into the higher elevations of the forest (Laudon 2019). Current wolf activity (https://www.wildlife.ca.gov/conservation/mammals/gray-wolf) overlaps the Walker Fire Salvage area.

Potentially suitable habitat for wolves is broad and vast on Plumas National Forest because wolves range widely and use diverse habitats. We assessed impacts to wolf throughout the action area by evaluating risks. Wolves are anticipated to use the entire project area, except Antelope Lake, and therefore all 58,787 acres within the Walker Fire Rehabilitation Project and 70,394 acres within the 2020 Plumas National Forest Road and Trail Maintenance project, are considered suitable habitat to assess indirect impacts to wolf.

Figure 8. Gray wolf detected at the north end of the Plumas NF near the Lassen NF boundary, June 29, 2017.

Project Surveys

No project specific carnivore surveys were conducted, however previous surveys had been conducted in the action area. Camera stations were monitored (using deer meat for bait and gusto scent) for a minimum of 28-days per camera station following the Zielinski and Kucera (1998) protocol (Figure 9). There were 122 camera stations in the larger 2020 Plumas National Forest Road and Trail Maintenance Project Action area and 90 of these stations were in the smaller Walker Fire Rehabilitation Project Action area. All camera stations were run between 1995 and 2016, prior to the establishment of the Lassen Pack. No wolves were detected during camera station surveys. Wolf tracks were located during project layout along road 26N54B1(Figures 10-12). Wolves are capable of large-scale movements and it is plausible that wolves from the Lassen Pack wintering in the North Arm of Indian Valley are the wolf tracks recently detected in the Walker Fire Projects area. The Walker Fire Projects area is considered to be part of the Lassen Pack home range area (https://www.wildlife.ca.gov/conservation/mammals/gray-wolf).

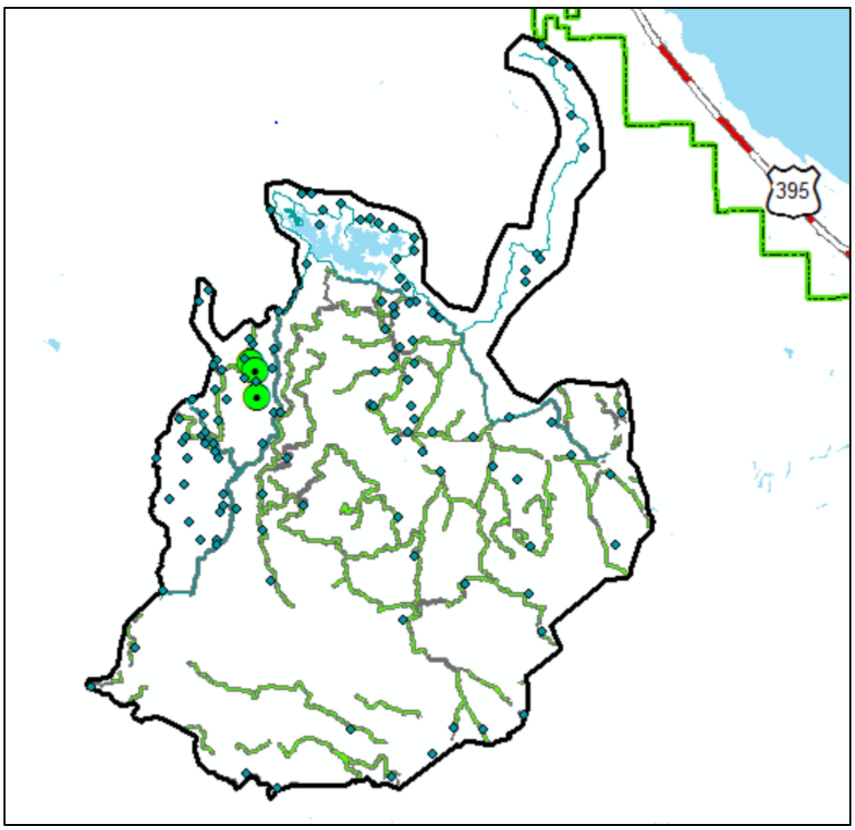

Figure 9 - Camera station deployment (blue points, N=122) in the action area of the 2020 Plumas National Forest Road and Trail Maintenance Project. Planned roadside hazard tree removal areas shown in green and road surface maintenance shown in blue lines. No wolves were detected with camera station deployment in the action area (1995-2016). Large green points show incidental wolf track locations detected in March 2020.

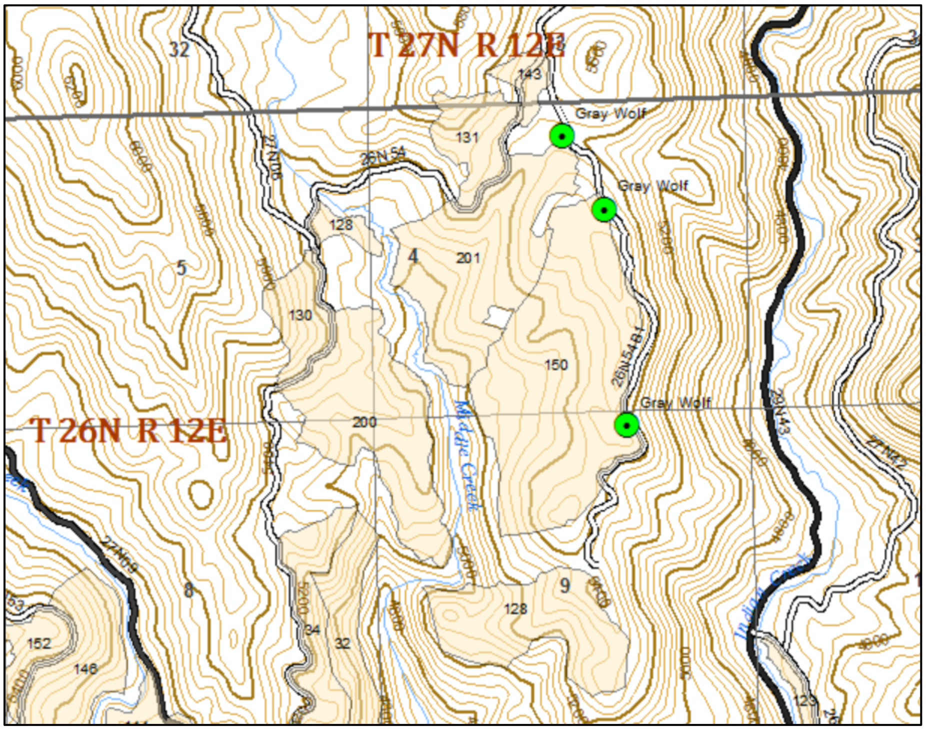

Figure 10. Tracks went up and down the 26N54B1 road and connect all three points on this map. Three points are where Plumas NF employee Zach Wood added three game camera stations at areas of dense tracks and where trees provided potential game camera location. All tracks were observed March 5, 2020. Game cameras were added March 10, 2020. To date, no wolves were photographed on these 3 camera stations. Salvage harvest units are shown in beige polygons.

Figure 8 - Photograph of gray wolf track taken on March 5, 2020 in the project area by Zach Wood (Plumas NF employee). Track on right was approximately 5.25 inches long by 4 inches wide. These two tracks likely two different wolves based on size difference between tracks.

Figure 9 - Multiple sets of wolf tracks in Walker Fire project area, March 5, 2020 (photograph by Zach Wood, Plumas NF).

Environmental Effects

Direct and Indirect Effects

While wolves aren't currently denning in the project area, wolves do defend large home ranges (ranging from 30 – 400 square miles, depending on location, Kovacs et al. 2016) and exhibit considerable daily movements (>5 miles/day, Kovacs et al. 2016), making it is difficult to determine if a gray wolf might occur in or near the project area at the time of project implementation (2020-2024). Gray wolf space use is dynamic, depending on motivation (e.g., feeding versus denning) and wolf pack boundaries frequently shift, as does annual den site selection (Kovacs et al. 2016). Because the project area overlaps the Lassen Pack home range, there is the potential for future denning or rendezvous sites to become established in the project area prior to or during implementation. Regardless of the whereabouts of the Lassen Pack, it is not expected that the wolves would be directly impacted by the proposed actions. Wolves' typical reaction to human disturbance is avoidance (Kovacs et al. 2016), and wolves have been documented to relocate pups out of areas of heavy equipment disturbance (Theil et al. 1998). While reproductive success may not be influenced by the amount or types of human activities, wolf pups may be vulnerable to disturbance when younger (Frame et al. 2007).

There is potential for injury or mortality to individuals from vehicle collision. However, the likelihood of a collision between logging vehicles or road maintenance vehicles is low due the relatively slow speed traveled on Forest Service roads in the project areas (15-35 mph).

While direct effects to the gray wolf are unlikely, the proposed action could potentially effect prey resources and could alter the wolves' behavior. Therefore, to prevent indirect effects from occurring, conservation measures have been recommended. The project overall would not make any habitat unsuitable to wolves, other than disturbance-caused short-term avoidance of otherwise suitable habitat. Because disturbance-caused effects would be mitigated, therefore the project effects are largely discountable and insignificant.

Wolf packs are sensitive to human disturbance near den sites and may abandon the site (Ballard et al. 1987). Subsequently, most den sites are located away from trails and backcountry campsites. Wolves are denning on the adjacent Lassen National Forest (2017-2019) and the northern portion of the Plumas National Forest is currently occupied by wolves in the Lassen Pack as well as multiple singleton (dispersing) wolves. The risk of avoidance behaviors from the Walker projects is considered low as the spatial overlap of these projects with wolf range is relatively small compared to the large, and possibly expanding areas traversed by the species.

Conservation Measures

One month prior to commencement of timber harvest, road maintenance or other project activities that have the potential to cause direct effects to wolves, the Plumas NF shall contact California Department of Fish and Wildlife (CDFW) and the Fish and Wildlife Service to verify the presence of wolf activity near the project area. If no wolves are GPS-collared at the time of project implementation, the Forest Service will work closely with the CDFW and the Fish and Wildlife Service to ensure the best available information on wolf locations and habitat use are employed to inform management activities and monitoring on the Plumas National Forest. If an active den or rendezvous site is located within one mile of the project area, the following conservation measures would be implemented:

1. A limited operating period (LOP) restricting all noise or smoke generating activities shall be instated from April 1 through July 15. Further discussions and coordination with CDFW and the Service may result in a modified distances or more flexible dates for this specific conservation measure. In addition, if the den or rendezvous sites are clearly separated from project-generated disturbances by topographic features or terrain, seasonal restrictions may be adjusted or eliminated, as approved by the Service. These conservation measures would avoid or minimize disturbance at active den or rendezvous sites that could disrupt reproductive success or result in adverse effects. Dens that are known to be used in consecutive years but not used in the current year may require a LOP if CDFW or the Service determines it is necessary.
2. Early rendezvous sites are typically close to dens: implementing a LOP within 1 mile of den sites will generally mitigate effects to early rendezvous sites when pups are still vulnerable. Again, coordination with CDFW and the Service prior to implementation would be done to ensure protection of all known and/or newly discovered den and rendezvous sites.
3. If a den is discovered during implementation of the proposed project, the LOP shall be implemented and coordination with CDFW and the Service shall be pursued.

Environmental Baseline and Cumulative Effects

There are 58,787 acres of suitable habitat in the Walker Fire Rehabilitation action area, with 4,218 acres to be potentially impacted in the Walker Fire Rehabilitation project. There are 70,394 acres of suitable habitat in the 2020 Plumas National Forest Road and Trail Maintenance Project action area, with 7,886 acres to be potentially impacted in the treatment units. It is possible that non-federal actions could occur on private lands on 1,421 acres within the Walker Fire area adjacent to the project action area. These potential actions can add to the Project's disturbance effects to wolves. The Moonlight Restoration project and the Genesee Woods project could create additional disturbance in the action area.

Interdependent and Interrelated Actions

The proposed project has independent utility and is not dependent on implementation of other projects. The project area falls within both the planning areas of the Moonlight Fire Restoration EA and the Plumas National Forest Oversnow Vehicle project. Wildlife Protected Activity Center (PAC) treatments from the Moonlight Restoration environmental assessment are planned for restoration to the west of Walker Fire Salvage project area. The Franks Valley project proposes to harvest trees and complete fuel reduction treatments adjacent to the Walker Fire area. The other projects capable of impacting threatened, endangered, and proposed species or critical habitat have been, or will be, submitted for formal or informal consultation. This project is not expected to have direct effects on the wolf, and potential indirect effects have been mitigated through conservation measures. Therefore, the potential for cumulative effects is negligible.

Species Determination

The Walker Fire Rehabilitation Project **May Affect, but is not likely to adversely affect the Gray Wolf.** No direct effects to wolves are anticipated, and indirect impacts to prey species will be insignificant (spatially and temporally); however, it is not currently feasible to quantify such indirect effects through existing resources. It is anticipated that wolves will avoid the action area during implementation; however, the Forest Service will be able to mitigate any negative direct or indirect effects to wolves that may develop during implementation through project conservation measures. That is, if future wolf pack activity patterns indicate potential project impacts are no longer discountable, consistent coordination with partners at CDFW will direct appropriate project mitigations.

The 2020 Plumas National Forest Road and Trail Maintenance Project **May Affect, but is not likely to adversely affect the Gray Wolf.** No direct effects to wolves are anticipated, and indirect impacts to prey species will be insignificant (spatially and temporally); however, it is not currently feasible to quantify such indirect effects through existing resources. It is anticipated that wolves will avoid the action area during implementation; however, the Forest Service will be able to mitigate any negative direct or indirect effects to wolves that may develop during implementation through project conservation measures. That is, if future wolf pack activity patterns indicate potential project impacts are no longer discountable, consistent coordination with partners at CDFW will direct appropriate project mitigations.

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